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Heart Failure

CHANGES IN PULMONARY SYSTOLIC PRESSURES AFTER CARDIAC RESYNCHRONIZATION THERAPY RATHER THAN FUNCTIONAL CLASS, LEFT VENTRICULAR FUNCTION OR DIMENSIONS ARE ASSOCIATED WITH FEWER HOSPITALIZATIONS FOR HEART FAILURE EXACERBATION

Poster Contributions
Poster Sessions, Expo North
Saturday, March 09, 2013, 3:45 p.m.-4:30 p.m.

Session Title: Heart Failure: Cardiac Resynchronization Therapy
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Background: Cardiac resynchronization therapy (CRT) improves morbidity and mortality in patients with advanced systolic dysfunction and cardiac dyssynchrony. Elevated pulmonary artery systolic pressure (PASP) is a poor predictor factor in heart failure related with poor clinical outcome. An association between changes in PASP following CRT and hospital admissions for congestive heart failure exacerbations (CHFE) has not been demonstrated.

Methods: We studied 44 patients (age 66±11) with documented elevated PASP that received a CRT device. PASP, left ventricular end diastolic dimension (LVEDD) and ejection fraction (EF) measured by Doppler echocardiography were analyzed. Patients were classified as responders (decrease in PASP ≥ 5 mmHg and clinical/functional improvement) and no responders (no change/worsening in PASP and clinical/functional status). Hospitalizations for CHFE and other causes were evaluated.

Results: Mean follow-up time was 54±25 months. There were 23 (52%) responders and 21 (48%) no responders. Among responders, significant improvement was noted in PASP from 50±10 to 38±12mmHg (p=0.0004), NYHA functional class from 3.2±0.4 to 2.3±0.4 (p=0.0001) and EF from 25±6 to 34±11% (p=0.001). There were no changes in LVEDD. Within the no responders, there was an increase in PASP noted from 35±11 to 41±16 (p=0.006). Their NYHA functional class, EF and LVEDD improved after CRT from 3.1±0.3 to 2.2±0.6 (p=0.0001), 27±5 to 35±11% (p=0.0005) and 69±7 to 65±10mm (p=0.014) respectively. The average of hospitalizations among responders was 0.4±0.6 for CHFE compared to 1.5±3.2 for other causes (p=0.03). The no responder group had a mean of 1.4±2.3 hospitalizations for CHFE compared to 2.4±2.7 (p=0.08) admissions for other causes. Overall admissions for CHFE were lower in the responder group compared to the no responders, 0.4±0.6 vs 1.4±2.3 (p=0.019).

Conclusion: An improvement in PASP following CRT can be associated with reduced CHF hospitalizations. PASP can be easily measured by Doppler echocardiography and therefore could be considered a potentially useful parameter to predict hospitalizations for CHFE following CRT. A larger clinical study will be needed to confirm these findings.